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09/695,874	10/26/2000	Yoshiaki Umehara	N45-127803M/MI	2977
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GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			ART UNIT 3683	
DATE MAILED: 03/21/2006				

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/695,874  
Filing Date: October 26, 2000  
Appellant(s): UMEHARA ET AL.

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Andrew M. Calderon  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1/6/06 appealing from the Office action  
mailed 3/1/05.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the evidence (e.g., patents, publications, Official Notice, and admitted prior art) relied upon in the rejection of claims under appeal.

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Number	Name	Date	Country	Kind Code
4,705,093	Ogino	11-1987		
835530		02-1996	JP	A
9827353	Weiler	06-1998	WO	A1
1146718		06-1989	JP	A

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-11, 13-16, 19, 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 (JP'530) in view of US Patent 4705093 to Ogino in view of JP-1146718 (JP'718).

Re: claims 6, 9-11, 14-16, 19, 23-27. JP-835530 shows in figure 1 a caliper body of a vehicular disc brake, the vehicular disc brake inherently having a pair of frictional pads disposed opposite to each other with a disc rotor held therebetween, the caliper body including a cylinder 2 disposed on one side of the disc rotor, a reaction pawl 1 disposed on the other side of the disc rotor, and a bridge portion "a" for coupling the cylinder and the reaction pawl at the outer peripheral side of the disc rotor, the caliper

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body comprising: a union hole shown surrounding element number 5 formed at the bottom portion of the cylinder of the caliper body capable of being used as a sprue for molding the caliper body with a base material and a cavity shown in the area of element number 4 disposed with the union hole, but does not specifically disclose the limitation of the caliper body being made by a casting method with a base material while the side of molding the bottom portion of the of the cylinder is disposed in a vertically upper part of the cavity and also the side of molding the reaction pawl is disposed in a vertically lower part of the cavity.

Ogino teaches in teaches in col. 2 lines 18-21 the use of a gravity casting method to make a caliper body. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of making the caliper body of JP-835530 to have included gravity casting (inherently resulting in the side of molding the bottom portion of the of the cylinder, which includes the opening for the molten material, being disposed in a vertically upper part of the cavity and the side of molding the reaction pawl being disposed in a vertically lower part of the cavity), as taught by Ogino et al., in order to provide a well-known means of forming the whole shape of the caliper body.

JP-835530, as modified, describes the invention substantially as set forth above including the limitation of the side of providing the cylinder being made an action chamber, the side of providing the reaction pawl and the bridge being a reaction chamber, and a thick-walled connection between the cylinder and the bridge is made a central chamber, but does not include the specific volume ratios.

JP-1146718 teaches in lines 3-5 and in the last line of the abstract the practice of using optimal volume ratios to achieve little to no sink marks during the cooling process of molten material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the volumes of the various sections of the caliper body of JP-835530, as modified, to have been proportioned to have been in the range of 0.6 to 1.25 for the ratio of the central chamber to the reaction chamber or 0.7 to 1.35 for the ratio of the central chamber to the action chamber or any other optimal volume ratios as determined by routine experimentation, in view of the teachings of JP-1146718, in order to provide a means of minimizing shrinkage and sink marks. Examiner further notes that it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Re: claims 7, 8, and 28. With regards to the ratios being established specifically after casting but before being subjected to a cutting process or after casting and after being subjected to a casting process, Examiner notes that according to MPEP 2113 the patentability of a product does not depend on its method of production. Section 2113 goes on to state that if the product in the product-by-process claim is the same as or obvious from a prior art product, the claim is unpatentable even though the prior product was made by a different process. In re Thorpe, 777 F.2d 695,698,227 USPQ 964, 966 (Fed. Cir. 1985).

Re: claim 13. Ogino teaches the use of the base material being aluminum or

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aluminum alloy in col. 2 lines 12-13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the material of JP-835530 to have included aluminum or aluminum alloy, as taught by Ogino, in order to provide a base material that is both lightweight and sufficiently rigid. Examiner further notes that it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

3. Claims 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-835530 (JP'530) in view of US Patent 4705093 to Ogino in view of JP-1146718 (JP'718) as applied to claims 6 and 7 above and further in view of WIPO 98/27353.

WIPO 98/27353 teaches in col. 4 lines 13-16 the use of an insert core being incorporated in the casting of a brake caliper body to enable the base material to be injected in symmetry. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the casting procedure of JP-835530, as modified, to have included an insert core, as taught by Weiler et al., in order to provide a means of creating symmetrical caliper chambers and to inherently cause the base material to run toward the bridge and toward the reaction pawl by virtue of the contact with the peripheral surface of the core in combination with the downward force of gravity. Examiner further notes that according to MPEP 2113 the patentability of a product does not depend on its method of production. Section 2113 goes on to state that if the product in the product-by-process claim is the same as or obvious from a prior

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art product, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695,698,227 USPQ 964, 966 (Fed. Cir. 1985).

### **(10) Response to Argument**

Appellants argue that the Examiner failed to establish a prima facie case of obviousness. In support of their argument Appellants state that JP8-35530 (JP'530) fails to suggest that the inlet 5 is used as a sprue for injecting molten material into a cavity for forming the brake. Examiner disagrees.

Examiner notes that claim 6, for example, recites "a sprue which is formed at the bottom portion of said cylinder of the caliper body for molding the caliper body with a base material, wherein the caliper body is molded with a cavity disposed with a union hole formed from the sprue." The claim is directed to a sprue which "is *formed*" and a union hole "*formed* from the sprue." The claim further states as functional language that the sprue is "for molding". The recitations involving where and how the sprue is formed are directed to a method of production. At various sections of the Office Action mailed 3/1/05, Examiner pointed out that the "patentability of a product does not depend on its method of production". MPEP section 2113. Section 2113 goes on to state that "[i]f the product in the product-by-process claim is the same as or obvious from a prior art product, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695,698,227 USPQ 964, 966 (Fed. Cir. 1985). Accordingly, Appellants' product claim simply requires the presence of a sprue located in the area of the sprue shown in figure 4 of the instant invention that is *capable*



of being used for molding a caliper body. A sprue is defined by Webster's Collegiate Dictionary 10<sup>th</sup> Edition as a hole through which metal or plastic is poured.

Figure 4 of the instant invention shows a caliper body 10 having a hole 24 located in the middle of the right side of the body through which metal or plastic is poured. Similarly, figure 1 of JP'530 shows a caliper body 1 having a hole surrounding element 5 located in the middle of the right side of the body through which fluid is poured. The Ogino reference is used for the teaching of gravity casting to form a caliper body. Gravity casting includes the pouring of fluid in the form of metal or plastic through a hole to form a caliper body with the help of gravity.

Examiner maintains that in light of the discussion in section 2113 of the MPEP the prior art product presented in figure 1 of JP'530 is the same as or obvious from Appellants' product in figure 4 of the instant application, thus rendering Appellants' product-by-process claims unpatentable.

Examiner also maintains that the declaration of Mr. Ban was thoroughly reviewed. It is noted, however, that the declaration placed emphasis on the method of making the sprue. Since section 2113 of the MPEP states that "[i]f the product in the product-by-process claim is the same as or obvious from a prior art product, the claim is unpatentable even though the prior product was made by a different process", considerable weight cannot be given to Mr. Ban's statements that the caliper body of JP'530 is formed in a particularly different way. A similar response exists for Appellants' arguments on pg. 8 of the Appeal Brief regarding the gravity casting method of production.

It is also noted here that Appellants elected the product claims over the method claims set forth in the restriction of 9/16/04. Also, in an interview on 6/21/05 Examiner suggested that the limitations based on the method of production recited in the product claims would be better examined as method claims.

Appellants also argue that Examiner failed to show the ratios of the claimed invention in the rejections using the JP-1146718 (JP'718) reference. It is noted, however, that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In rebuttal to such a prima facie case of obviousness "the applicant must show that the particular range is critical, generally by showing that the claimed range achieves unexpected results relative to the prior art range." *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). In this case, Examiner notes that JP'718 includes the general condition of the claim with respect to the volume ratios because it teaches optimizing volume ratios to avoid the production of sink marks during the molding process. Additionally, Examiner maintains that the declaration of Mr. Ban fails to show that the particularly claimed ranges achieve "unexpected results relative to the prior art." Appellants mention on pg. 13 of the Appeal Brief that extensive experimentation yielded "results that were unexpected." Examiner maintains, however, that a bald allegation of unexpected results is not a "showing" of unexpected results. Accordingly, Appellants failed to meet the burden of rebutting the prima facie case of obviousness.

Appellants also argue that JP'718 is non-analogous art. In response to applicant's argument that JP'718 is non-analogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, JP'718 is reasonably pertinent to the particular problem with which Appellants were concerned. Appellants were concerned with providing particular volume ratios to eliminate sink marks during a molding process. JP'718 strives to achieve a stabilized molded product by optimizing volume ratios to eliminate sink marks. Appellants further argue by way of Mr. Ban's declaration that resins, the material used in JP'718, would not be used for a caliper body of a vehicular disc brake. Examiner notes that the argument is more specific than the claim language. The claims simply include the recitation of "a base material." JP'718 is generally used for the teaching of achieving a stabilized product by optimizing volume ratios during production of the product. It is reasonable that one of ordinary skill in the brake art striving for overall vehicle safety and component reliability at the time the invention was made would have looked to the teachings of JP'718 to modify the product of JP'530 in order to achieve a stabilized brake caliper. Accordingly, JP'718 cannot be considered to be non-analogous art.

Appellants argue that the prior art of record fails to show the limitation in claim 19 in which the "flange portion of the union hole is formed by processing the sprue after the casting." Examiner again maintains that the limitation is directed to a method of

production and that "[i]f the product in the product-by-process claim is the same as or obvious from a prior art product, the claim is unpatentable even though the prior product was made by a different process." The claim requires a flange portion of the union hole. In figure 3 of the instant invention filed 12/6/02 Appellants show a flange portion F and a union hole 24. Similarly, JP'530 shows in figure 1 a union hole surrounding element 5 and the flange portion of the union hole is element 5. Accordingly, the rejection is maintained.

With regards to the 103 rejections of claims 18 and 20-22, Appellant argues that the correct position for casting operations is not the same or similar to that of the symmetrical injection about the core. Examiner agrees that a correct core position for casting operations does not necessarily coincide with a position in which the base material is injected in symmetry about the core, however, in the case of WIPO 98/27353 the positions coincide as shown in figure 1 of the WIPO document. Examiner again notes that the symmetric injection limitation refers to the method of production and since figure 1 of the WIPO document shows a core 16 positioned symmetrically with respect to the caliper body 1 to the same extent that figure 5 of the instant application shows a core 42 positioned symmetrically with respect to the caliper body 10, the rejections have been maintained.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

mmb

*mmb*

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